Asplund WWTF 301(h) Permit Coordination Technical Meeting

May 19, 2022

3pm AST/4pm PST

Teams Meeting

Project and Meeting Goals

Project Goal: Provide the technical information to allow EPA/ADEC to make informed decisions for a permit reissuance

Meeting Goal: Establish communications and information exchange on 301(h) Renewal for AWWU Asplund WWTF Permit; get feedback on proposed project schedule

Agenda

- Introductions -- EPA, ADEC, AWWU, Jacobs
- Existing Data Sources
- Data Collections for Renewal
- Approach to Quality Assurance Project Plan (QAPP) and Data Collections
- Mixing Zone Study Approach
- Proposed NMFS Engagement
- Next Steps

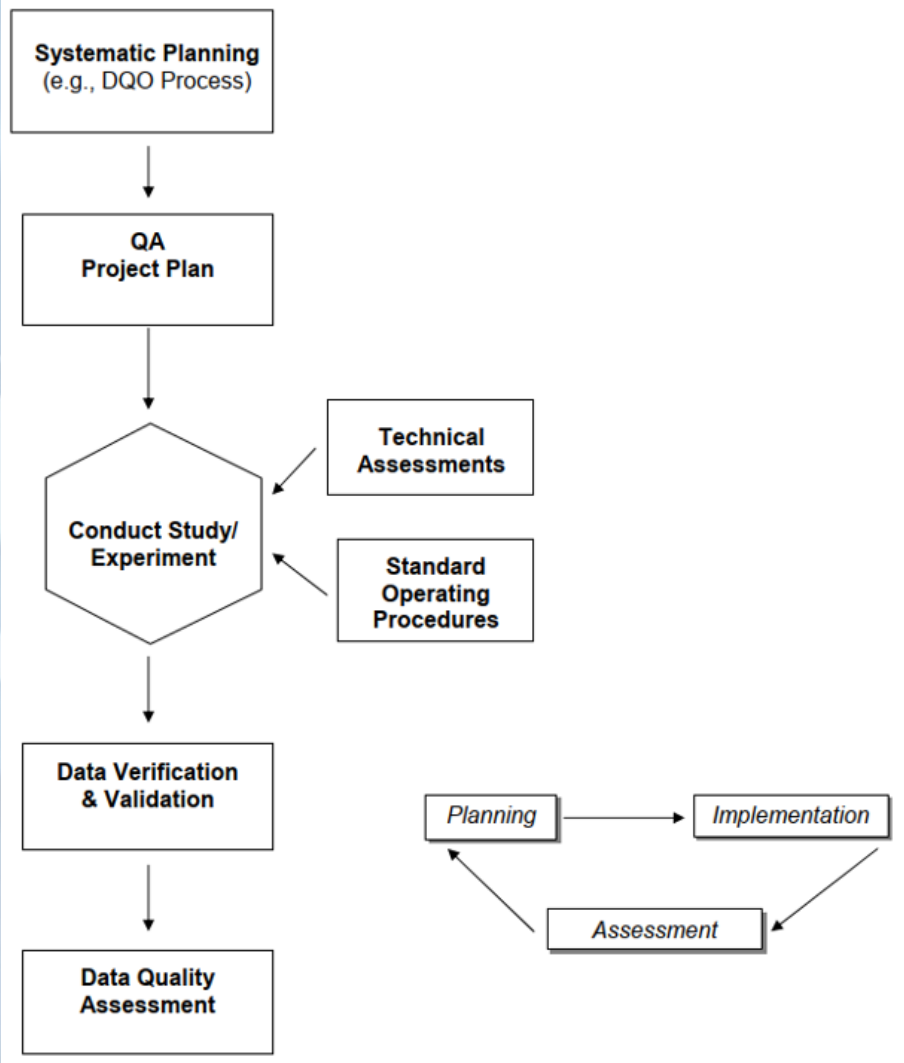
Existing Data Sources from NPDES Monitoring & 301(h) Studies

Data Category	Requirement	Frequency	Most Recent
Inlet Water Quality Data Metals, PAHs, bacteria, TRC - yearly Priority Pollutants (added in 2022)	Permit Language	Once a year	2021
Sediment Sampling	Permit Language	Once	2003
Fish Tissue Sampling (in lieu of algae)	Permit Language	Once	2004
Fish population survey	Permit – not req.	None	None
Benthic Infauna (subtidal & intertidal)	Prior Permit	Twice	1989
Influent, Effluent, & Sludge – Priority Pollutants (PP)	Permit Language	Twice/year – PP Six/year – Metals Quarterly - WET	Summer 2021

Data Collections Assumed for NPDES/301(h) Renewal

Data Category	Use/Need	Frequency	Planned
Inlet Water Quality Data Metals, PAHs, bacteria, TRC - yearly Priority Pollutants	301(h) Questionnaire	Once a year	2022 & 2023
Sediment Sampling	301(h) Questionnaire	Once	2022 or 2023
Marine Bathymetry & Habitat Survey	301(h) Questionnaire	Once	Summer 2022
Fish Tissue Sampling	301(h) Questionnaire	Once	2022 or 2023
Fish population survey	301(h) Questionnaire	Once	2022 or 2023
Benthic Infauna (subtidal & intertidal)	301(h) Questionnaire	Once	2022 or 2023
Influent, Effluent, & Sludge – Priority Pollutants (PP)	301(h) Questionnaire	Twice/year – PP Six/year – Metals Quarterly - WET	Summer 2022

Approach to QAPP & Data Collections



DRAFT OUTLINE FOR QUALITY ASSURANCE PROJECT PLAN (Abbreviated)

1 Introduction and Background

2 Project Management, Organization, and Data Quality Objectives

3 Data Generation and Acquisition

- *3.1 Effluent*
- *3.2 Receiving Water Quality*
- *3.3 Marine Bathymetry and Surficial Habitat Survey*
- *3.4 Sediments*
- *3.5 Benthic Infauna Community*
- *3.6 Demersal and Nearshore Fish Community*
- *3.7 Fish Tissue Bioaccumulation Survey*

4 Quality Assurance

- *4.1 Quality Assurance Requirements*
- *4.2 Quality Assurance Procedures*
- *4.3 Quality Control Procedures*
- *4.4 Decontamination Procedures*
- *4.5 Sample Custody*
- *4.6 Calibration and Preventive Maintenance*
- *4.7 Training and Recordkeeping*
- *4.8 Data Management*

5 Assessment and Oversight

- *5.1 Audits and Assessments*
- *5.2 Corrective Actions*
- *5.3 Reports to Management*

6 Data Management and Validation

- *6.1 Data Review and Verification*
- *6.2 Data Validation*
- *6.3 QA Reports*

7 Study Documentation

6 References Cited

Appendixes

Data Collections in the QAPP

- ***3.1 Effluent***
  - ***Ongoing NPDES monitoring and priority pollutants***
- ***3.2 Receiving Water Quality***
  - ***Ongoing NPDES monitoring plus additional priority pollutants***
- ***3.3 Marine Bathymetry and Surficial Habitat Survey***
  - ***Multi-beam sonar survey provides detailed bathymetry and habitat images***
- ***3.4 Sediments***
  - ***Subtidal and intertidal sampling sites near the AWWTF outfall and control site (Point MacKenzie) for physical and chemical analyses***

Data Collections in the QAPP

- ***3.5 Benthic Infauna Community***
  - ***Subtidal and intertidal sampling sites near the AWWTF outfall and control site (Point MacKenzie) for collection of benthic invertebrates for classification and enumeration***
- ***3.6 Demersal and Nearshore Fish Community***
  - ***Intertidal beach seining and mid-water trawls within the ZID and at control sites (near Point MacKenzie)***
- ***3.7 Fish Tissue Bioaccumulation Survey***
  - ***Fish tissue chemical analyses (priority pollutants) on selected abundant organism during fish sampling (Pacific cod?)***

Proposed Approach to QAPP Preparation and Reviews

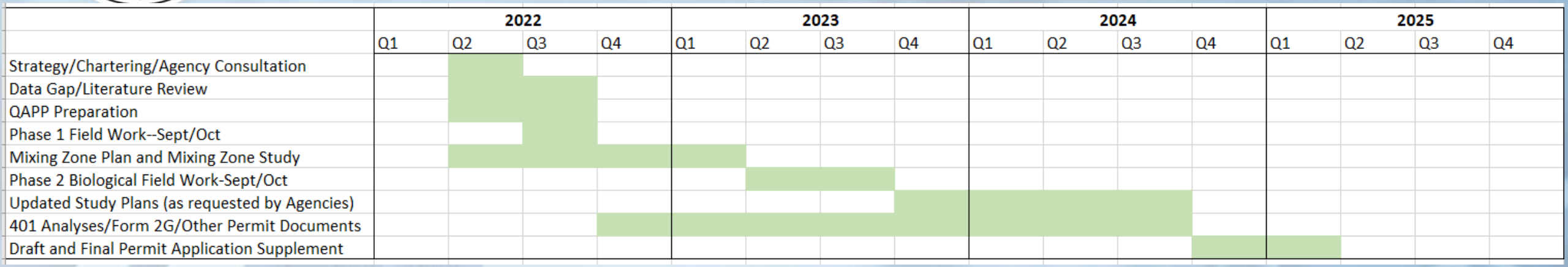
Proposed Schedule

- ***Near term provide QAPP Outline***
- ***End of June 2022 provide draft QAPP***
- ***Mid-July 2022 QAPP Review Workshop with EPA/DEC***
- ***Phase 1 Field Work -- August to October 2022***

Alternative Schedule

- ***Q1 2023 provide draft QAPP***
- ***Q2 2023 QAPP Review Workshop with EPA/DEC***
- ***Phase 1 Field Work -- August to October 2023***

Proposed Schedule with Field Work in 2022/2023



Advantages

- Higher assurance of getting two rounds of field work prior to permit application supplement
- Supports earlier mixing zone study work

Disadvantages

- May limit feedback in 2022 from EPA/DEC/NMFS

Alternative Schedule with Field Work in 2023/2024

	2022				2023				2024				2025			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Strategy/Chartering/Agency Consultation																
Data Gap/Literature Review																
QAPP Preparation																
Phase 1 Field Work--Sept/Oct																
Mixing Zone Plan and Mixing Zone Study																
Phase 2 Biological Field Work-Sept/Oct																
Updated Study Plans (as requested by Agencies)																
401 Analyses/Form 2G/Other Permit Documents																
Draft and Final Permit Application Supplement																

Advantages

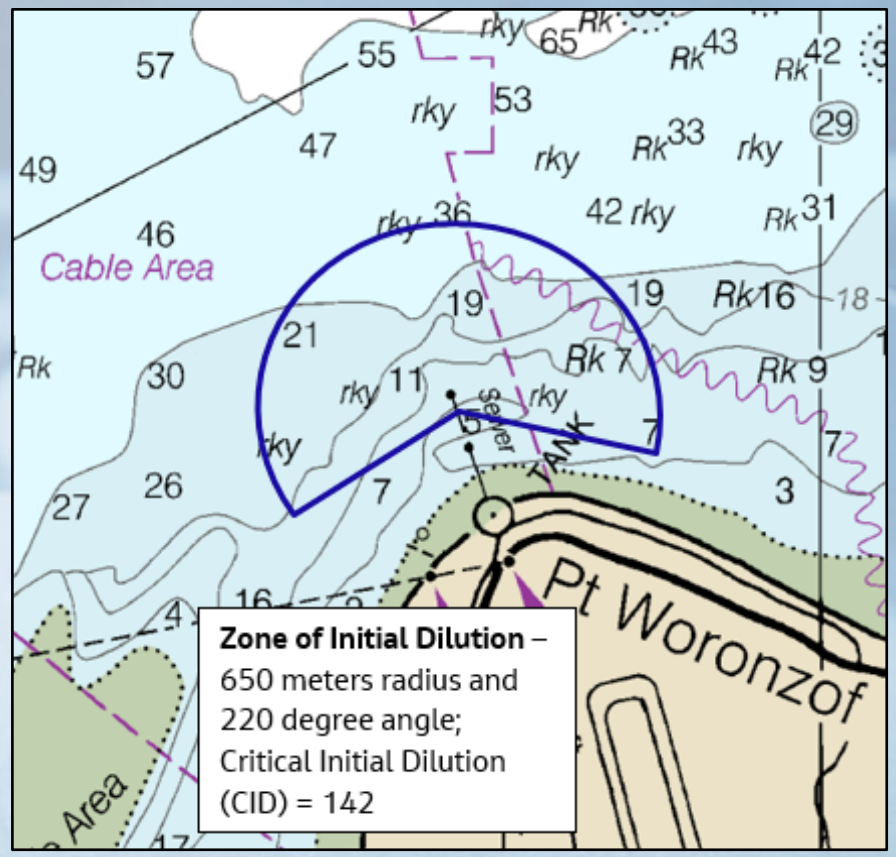
- Allows longer review times for EPA/DEC/NMFS
- Less chance for additional data collections, if needed

Disadvantages

- Higher risk that only one round of field data collections available
- Could slow Mixing Zone Study work

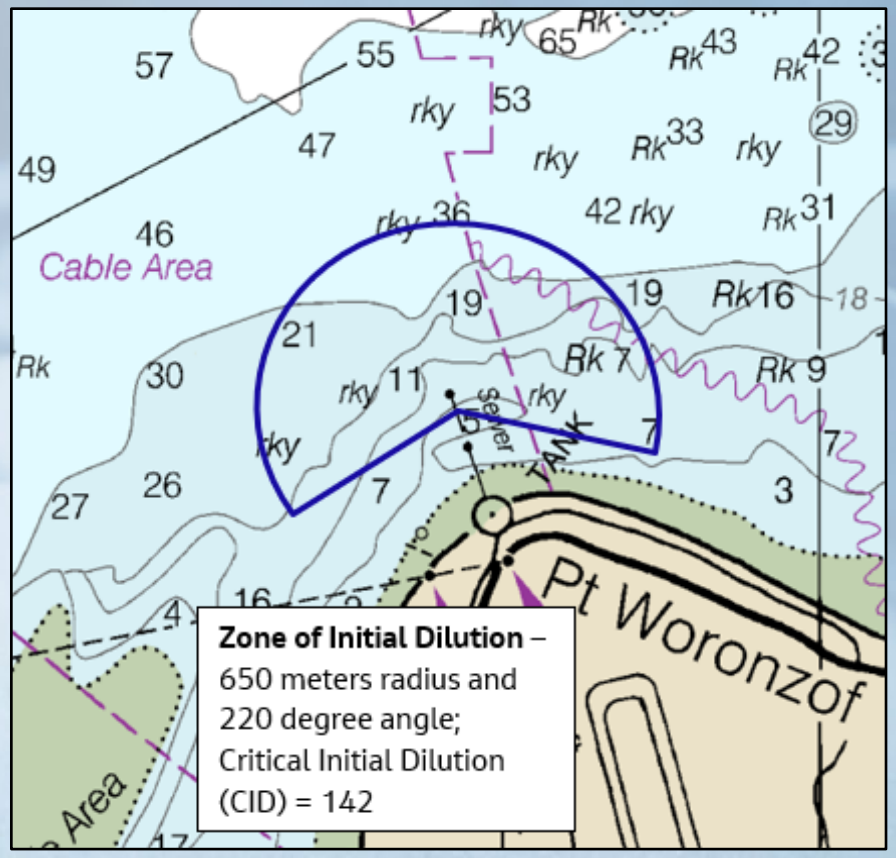
Mixing Zone Approach for Asplund WWTF Outfall

- Discharge site characteristics are unique and unlike SE AK dischargers -- shallow site with extreme tidal current velocities and mixing
- Step 1 - Conduct screening modeling using DKHW, UM3, and CORMIX models with historic effluent flows and receiving water conditions – to assess and match results
- Step 2 - Conduct direct comparisons between dilution modeling results and field tracer study measurements for the Asplund outfall diffuser
- Step 3 - Select representative dilution model based on field-measured dilutions



Mixing Zone Approach for Asplund WWTF Outfall

- Step 4 - Confirm definition of completion of initial dilution (1% difference between effluent and ambient density) – as applied in 2005 renewal application
- Step 5 - Communicate with EPA and DEC
- Step 6 - Develop updated effluent characteristics data to develop updated dilution modeling results
- Step 7 - Conduct dilution modeling using selected model and existing and projected effluent flows



Coordination with NMFS--Suggest engaging NMFS as early as possible

- Consult prior to Phase 1 Field Work
- Requesting EPA and NMFS review comments on 2011 Biological Evaluation
- Discuss requirements for BE update to support NMFS Biological Opinion
- Discuss timeline for Biological Opinion for 301(h) and NPDES renewal

Next Steps

Proposed Schedule Assumed:

- QAPP Outline for EPA/DEC review – in May
- Draft QAPP – late June 2022
- QAPP Review Workshop with EPA/DEC - Mid-July 2022
- Phase 1 Field Work -- August to October 2022